

REMARKS

In order to expedite the prosecution of the present application and to more particularly point out and distinctly claim the subject matter which Applicants regard as the invention, Claim 31 has been amended to limit the amount of matrix resin (A) to 30 to 70 mass%, the amount of polyphenylene ether-based resin (B) to 70 to 30 mass%, the upper limit of the water-soluble substance (C) to 2 mass parts and the upper limit of the phosphorus compound (E) to 2 mass parts. Support for these amendments can be found in Examples 7-9 and 11 and the third paragraph on page 9 of the present application. Accordingly, Claims 32-34 have been canceled. No new matter has been added.

Claims 20, 21, 31-40 and 50 have been rejected under 35 USC 103(a) as being unpatentable over Sano et al in view of Morimoto and Jeong et al. Applicants respectfully traverse this ground of rejection and urge reconsideration in light of the following comments.

The presently claimed invention is directed to a plated resin molded article that has a metal plating layer provided on the surface of a thermoplastic resin article formed from a composition comprising the following components:

(A) 30 to 70 mass % of a matrix resin that has a water absorption after 24 hours in 23°C water, according to ISO62, of at least 0.6% and selected from the group consisting of a polyamide 6 resin, a polyamide 66 resin and a polyamide 6/66 resin;

(B) 70 to 30 mass % of a polyphenylene ether-based resin;

(C) a water-soluble substance having a solubility at 25°C of not more than 300g in 100g of water and selected from the group consisting of pentaerythritol and dipentaerythritol in an amount of 0.01 to 2 mass parts per 100 mass parts of the sum of components (A) and (B);

(D) at least a surfactant in an amount of 0.01 to 10 mass parts per 100 mass parts of the sum of components (A) and (B), the surfactant being an α -olefin sulfonate; and

(E) a phosphorus compound comprising one or more members selected from the group consisting of a condensed phosphate ester, an aliphatic acid aromatic phosphate ester of an orthophosphate ester, an alkali metal salt of melamine polyphosphate tripolyphosphoric acid, pyrophosphoric acid, orthophosphoric acid or hexametaphosphoric acid and phytic acid, an alkali metal salt thereof and an alkanolamine salt thereof in an amount of 0.1 to 2 mass parts per 100 mass parts of the sum of components (A) and (B).

As discussed in previous Responses, the present invention provides a plated resin molded article which has a high adhesive strength between a thermoplastic resin molded article and a metal plating layer provided thereon and produces a plated resin molded article having a beautiful aesthetic appearance while avoiding an etching step using a heavy metal-containing acid or potassium permanganate. The components of the present invention act in a synergistic manner to provide an improved adherence strength to the metal plating layer and provide a plated resin molded article having a beautiful aesthetic appearance without the use of compounds which present an environmental hazard. It is respectfully submitted that the prior art cited by the Examiner does not disclose the presently claimed invention.

The Sano et al reference discloses a plated polyamide resin article which is obtained by plating a molded article of a polyamide resin composition containing from 30 to 80 wt.% of a polyamide resin, from 20 to 70 wt.% of a polyphenylene ether resin, from 0 to 50 parts by weight of an impact modifier and from 0.01 to 30 parts by weight of a compatibilizer. The polyamide resin forms a continuous phase and the polyphenylene ether resin forms a disbursed phase, with the polyamide resin having a crystallinity of from 20 to 55% with the crystalline

region thereof being not less than 72% in the γ crystal form. As admitted by the Examiner, this reference has no disclosure with respect to the polyamide composition of Sano et al containing the claimed water-soluble substance. Sano et al merely provides a broad generic disclosure without any specific examples which fall within the scope of the present claims. As such, the secondary references cited by the Examiner must supply the teachings missing in Sano et al and provide the proper motivation to combine these missing teachings with the disclosure of Sano et al in order to make a showing of prima facie obviousness under 35 USC 103(a), which can then be rebutted by showings of unexpectedly superior properties.

The Morimoto reference has been cited by the Examiner as teaching that dipentaerythritol may be added to polyamide compositions in order to give the compositions a good fluidity and mechanical strength properties and thereby provide the motivation for adding dipentaerythritol to the polyamide composition of Sano.

The Jeong et al reference discloses a polyamide resin composition having excellent weather resistance and coating adhesion properties and has been cited by the Examiner as teaching that a fire-retardant material, such as triphenylphosphate, may be added to polyamide compositions in order to improve their fire retardant properties. Therefore, at best, the references cited by the Examiner present a showing of prima facie obviousness under 35 USC 103(a) which can be rebutted by showing the superior properties of the compounds of the presently claimed invention.

The currently presented claims have been amended in order to limit the claimed invention closer to that of the Examples contained in the present specification. Specifically speaking, Examples 7-11 correspond specifically to the presently claimed invention and Claims 35-37 correspond specifically to the compositions tested in Examples 7-11. As shown in Table 1 on

page 23 of the present specification, these compositions clearly have a superior adhesive strength as compared to the compositions of Examples 1-5 which are closer to the presently claimed invention than the disclosure of the Sano et al reference. These showings of unobviousness clearly establishes the patentability of the presently claimed invention over the prior art cited by the Examiner.

The Examiner is respectfully requested to reconsider the present application and to pass it to issue.

Respectfully submitted,



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Encl: None

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